

ID-OD DISCRIMINATION SENSOR CONCEPT FOR A MAGNETIC FLUX LEAKAGE INSPECTION TOOL

ABSTRACT OF THE DISCLOSURE

An instrument pig and method of operation thereof for determining the characteristics of a ferromagnetic pipeline through which it passes, including a pig body, first and second coaxial circumferential, spaced apart magnets of opposed polarities supported to the pig body and providing substantially complete magnetic saturation of an area of the pipeline between the magnets, first instruments between the magnets and arranged to generate signals that are responsive to flux leakage servicing to provide first information as to anomalies in the pipeline interior and/or exterior surfaces, second instruments supported by the pig body between said magnets and arranged to generate signals that are responsive to eddy currents induced in the pipeline interior surface servicing to provide second information as to anomalies in the pipeline interior surface, signal processing circuitry combining the first and second signals and wherein the second instruments are energized only in response to signals generated by said signal processing circuitry.